

Hershey.

May 11, 1960

Dr J. R. Killian, Jr.
Atoms for Peace Awards
77 Massachusetts Avenue
Cambridge 39, Mass.

Dear Dr. Killian:

With your permission, may I make a double nomination:

Dr. A. D. Hershey
Carnegie Institution
Cold Spring Harbor,
L.I., N.Y.

and

Dr. A. Kornberg
Department of Biochemistry
Stanford University
Palo Alto, California

as worthy recipients for the Atoms for Peace Awards, whose work "constitutes a significant contribution to the peaceful use of the atom for the good of mankind." The basis of this nomination is the scientific application of radioactive isotopes towards the most significant studies in recent years on the composition and function of the genetic material.

Dr. Hershey's leading contribution in this field was the demonstration that infection of a susceptible cell by a virus depended on the separation of the nucleic acid from the protein components of the virus particle. The nucleic acid alone could enter the cell, and carried with it all the necessary specifications for the maintenance of infection, and for the reproduction of complete virus particles. Our contemporary outlook in virus biology stems from this crucial experiment, which involved the differential labelling of protein with S35 and of nucleic acid with P32. For a general review, see Hershey, A.D., 1957 "Bacteriophage T2: parasite or organelle", Harvey Lectures, 51:229-239.

Dr. Kornberg's interests have been the enzymatic mechanisms for the synthesis of nucleotide coenzymes and of nucleic acids. His initial approach was based on the sensitive detection, by the use of C14 or P32 thymidylic acid, of marginal degrees of incorporation of this precursor into nucleic acid. By extremely competent, efficient and incisive steps, he exploited this method of analysis, and the direct approach of isolating and purifying the pertinent enzymes and co-factors, leading to the isolation of an enzyme, DNA synthetase, which is involved in the replicative synthesis of nucleic acids. The precursors for this synthesis are four compounds, thymidylic acid, deoxycytidylic acid, deoxyguanylic acid and deoxyadenylic acid, each of which is necessary for the complete synthesis. This work is unquestionably the prelude to the artificial replication of genetic material in the test tube.

Yours sincerely,

Joshua Lederberg